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- L1: (14693) 455/260 455/255 455/256 455/276.1 455/293 455/313 455/323
- L2: (27) 1 and (frequency near5 exciter)
- L3: (1) 2 and "delta sigma modulator"
- L5: (0) 4 and (alter\$3 near5 "frequency characteristics")
- L4: (1) 3 and (DAC or "D/A" or "digital-to-analog")
- L6: (1) 4 and clock
- L7: (0) 6 and "frequency characteristics"
- L8: (0) 6 and "tunable filter"
- L9: (9) 1 and (alter\$3 near8 "frequency characteristics")
- L10: (3) 9 and "tunable filter"
- L11: (1807) 455/260 455/255 455/256 455/276.1 455/293 455/313 455/323
- L12: (85) 11 and "delta sigma modulator".clm.
- L13: (2) 12 and "frequency characteristics".clm.
- L14: (1) 13 and (alter\$3 near8 "frequency characteristics").clm.
- L15: (0) 14 and "tunable filter".clm.

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- S1: (1383) "delta sigma modulator" and frequency
- S2: (952) S1 and (DAC or "D/A" or "digital-to-analog")
- S3: (12) S2 and "tunable filter"

(1) United States  
 (2) Patent Application Publication (3) Pub. No. US 2005/0099327 A1  
 (4) Publication Date: May 12, 2005

(5) RELATED U.S. PATENT APPLICATIONS

(6) INVENTOR: Ian Robinson, Verona, CA (US). Present Address: San Diego, CA (US).

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(7) Appl. No.: 10/794,732

(8) Filing Date: Nov. 12, 2003

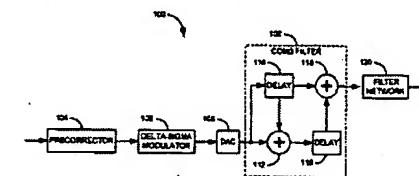
Publication Classification:

(9) Int. Cl.: H03K 20/00

(10) U.S. CL.: 341-140

## (11) ABSTRACT

A system and method for generating a digital signal into an analog signal. A digital-to-analog converter assembly comprises a delta-sigma modulator, a digital-to-analog converter, an anti-aliasing filter, and a noise shaper. The digital-to-analog converter assembly is configured to produce a digital output signal having at least one modulated high frequency component. The digital-to-analog converter assembly also includes a noise shaper having at least one modulated high frequency band. The modulated high frequency noise band is fed into the digital-to-analog converter assembly and other weights filter the noise signal. The noise filter has at least one pole placed in series. Other assembly elements are used to improve digital signal output of the noise shaper to improve digital signal quality.



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1	<input type="checkbox"/>	US 20050099327	20050512	12	DELTA-SIGMA DIGITAL-TO-ANALOG CO	341/143		Robinson, Ian et al.

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- L6: (1) 4 and clock
- L7: (0) 6 and "frequency characteristics"
- L8: (0) 6 and "tunable filter"
- L9: (9) 1 and (alter\$3 near8 "frequency characteristics")
- L10: (3) 9 and "tunable filter"

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9 and "tunable filter"

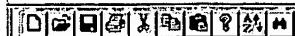
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3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	US 6809669 B1	20041026	14	Selective noise generator	341/131	341/143; 341/144		Robinson; Ian

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  - S5: (7) S4 and control
  - S6: (10) S2 and "tunable filter"
  - S7: (6) ("5451949") or ("6291924") or ("6462689") or ("6538592") or
  - S8: (2855290) 2002/0110189 A1
  - S9: (0) "2002/0110189\_A1"

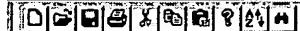
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6 and "tunable filter"

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- S9: (0) "2002/0110189 A1"

S10: (13) [couissi.in](#)

### United States Patent Meyer

Patent No.: US 6317468 B1  
Date of Patent: Nov. 13, 2001

(10) **IF EXCITER FOR RADIO TRANSMITTER**

(11) **Author:** Ronald R. Meyer, Cedar Rapids, IA

(12) **Assignee:** Rockwell Collins, Cedar Rapids, IA

(13) **Inventor:** Ronald R. Meyer, Cedar Rapids, IA

(14) **Filed:** Jan. 15, 1998

(15) **Int. Cl.:** H04B 1/26 (1991.01); H04B 1/28 (1991.01)

(16) **U.S. Cl.:** 375/269; 375/271; 375/272

(17) **Field of Search:** 375/269; 375/271; 375/272

(18) **Reference Cited:** U.S. PATENT DOCUMENTS

P-1949 • 51451949; Meyer et al., 2002/0110189 A1

P-1924 • 6291924; Meyer et al., 2002/0110189 A1

P-1924 • 6462689; Meyer et al., 2002/0110189 A1

P-1924 • 6538592; Meyer et al., 2002/0110189 A1

ALUMINUM ALLOY - ALUMINUM 3003-H14  
UNITED STATES PATENT AND TRADEMARK OFFICE

A CROSS-POLARIZED TRANSMITTER WITH REDUCED ANGLE COHERENCE  
by Ronald R. Meyer et al.

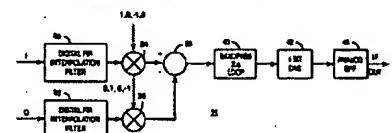
\* cited by examiner

Primary Examiner - Carl R. Hause  
Attorney, Agent or Firm - Robert G. Atiles, Kyle  
Esq.

ABSTRACT

An article and apparatus for producing an amplitude-modulated waveform from a digital sample source. The article includes the steps of: (a) receiving a digital sample source; (b) applying the digital sample source to a digital-to-analog converter; (c) applying the output of the digital-to-analog converter to a single-bit sample switch, with opening and closing of the switch controlled by a feedback of the transmission frequency; the method further includes the steps of converting the single-bit sample switch output to a digital signal and applying the digital signal to a digital-to-analog converter to produce an amplitude-modulated waveform.

22 Claims, 8 Drawing Sheets



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U	I	Document ID	Issue Date	Pages	Title	Current OR	Current	Ret	Inventor
1	<input type="checkbox"/>	<input checked="" type="checkbox"/> US 6317468 B1	2001-11-13	11	IF exciter for radio transmitter	375/269	375/271		Meyer, Ronald R.

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- L9: (9) 1 and (alter\$3 near8 "frequency characteristics")**
- L10: (3) 9 and "tunable filter"

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1 and (alter\$3 near8 "frequency characteristics")

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3	<input type="checkbox"/>	<input checked="" type="checkbox"/> US 6809669 B1	20041026	14	Selective noise generator	341/131	341/143; 341/144		Robinson; Ian

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9 and "tunable filter"

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455/276.1 455/293 455/313  
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- L15: (0) 14 and "tunable filter".clm.
- L16: (2) alter\$3 near5 "associated frequency characteristics"**

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alter\$3 near5 "associated frequency characteristics"

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2	<input type="checkbox"/>	US 6809669 B1	20041026	14	Selective noise generator	341/131	341/143; 341/144		Robinson, Ian

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